

DOLL HEAD CONSTRUCTION

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a toy doll and more particularly to an
5 improved doll head and method of manufacturing the same.

Various types of toy dolls which have a soft pliable face, including those which produce sounds and simulated speaking or sucking, are known in the art. That soft pliable face portion of the doll must be coupled to the remainder of the toy. The present invention provides such a construction.

10 SUMMARY OF THE INVENTION

It is an object of the present invention to provide a flexible doll head having a foam insert with a mesh coupled to the surface of the foam insert so that the foam does not disintegrate when the doll head is heat bonded or sewn onto the doll body or is flexed.

15 Disclosed is a doll that has a doll head and a doll body. The doll head has a mesh coupled to its inner surface. The doll body is attached to the doll head by sewing a fabric coupled to the doll body to the doll head with stitches that extend through the mesh.

BRIEF DESCRIPTION OF THE DRAWINGS

20 FIG. 1 is a perspective view of an animated monkey toy doll of the present invention containing a cut-away portion for illustrating the

construction of the operating device for the toy doll according to the present invention;

FIG. 2 is a perspective view of the operating device of the animated toy doll according to the present invention; and

5 FIG. 3 is a side view of the doll head.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

For convenience, the present invention will be described in relation to the animated monkey doll described in U.S. patent no. 6,110,001. That doll contains an internal mechanism. However, this invention is not limited that
10 particular mechanism or any other mechanism and can apply to any type of doll, whether or not it is animated by a mechanical devise.

As shown in FIGS. 1 and 2, the monkey toy doll includes a soft face member 21. The face member 21 contains a mouth 28 having a pair of lips 30, a pair of eyes 22 disposed in a pair of holes 33, a pair of ears 37, and a nose 36.
15 Each eye 22 is supported on an eye seat 32. The face member 21 is fixed on a body member 41 having a pair of hands 38 and a pair of legs 39.

The face member 21 is soft and pliable so that it can be moved, either by a child playing with it or by means of an internal animation mechanism. The internal mechanism can use a motor to move the face member 21 or,
20 alternatively, be manual operated to move the face member 21. One such animation mechanism is described below. The internal mechanism can automatically or manually move the body 41.

Referring in detail to FIG. 2, the operating device 10 includes a base lever 11 and a pivotal plate lever 12 pivotally connected to the base lever 11
25 through a pivot pin 19. The pivot pin is supported on the top end portion of

the base lever 11 for slideable insertion into a pivotal aperture 18 of the pivotal plate lever 12. A spring 13 and a squeaker or bellows 14 having a squeaker nozzle or mouth 35 are disposed between the lower portions of the base and pivotal plate levers 11 and 12.

5 The base lever 11 has an upper extension member 16 which extends toward the face member 21 for tightly receiving a pair of eye supports 32 supported on a pair of grooves 40 and a middle extension 17 which extends toward and is secured to face member 21 using aperture 34 disposed therein.

10 The pivotal plate lever 12 has a slit 27 disposed at the upper portion thereof for selectively engaging one of a plurality of knots 26 disposed at one end of the string 25 which connects the mouth to the pivotal plate lever. The string 25 which can be made of nylon is fixed to a throat connector 23 at the end of the string 25 opposite to the knots. The pivotal plate lever 12 has a rectangular opening 42 for slidably receiving the middle extension 27 so that it
15 can freely move in the rectangular opening 42 when the user squeezes the pivotal plate lever 12.

 As shown in Figure 3, the face member 21 comprises the outer skin 100, inner stuffing 110 and a layer of mesh 120. The skin of the doll head can be made from vinyl, PVC or the like. The material of construction is not limited
20 as long as it is pliable. The skin is preferably soft and stretchable so that as the skin moves, it does not tear. Further, the skin should be able to accept dye or paint so that facial features can be added such as rosy cheeks, lipstick, eyelashes and the like. Further, the material should be soft enough so that imitation hair can be added for such items as eyebrows 130 or the like.

The stuffing 110 is bonded to the skin 100. In a preferred embodiment of the invention, the stuffing is a foam, and more preferably, is a polyurethane foam. Alternately, the stuffing can be any type of foam or white polyicyene microcellular expanding foam, a material chemically related to pillow or upholstery foam, which flows smoothly under pressure as a liquid, and includes a blowing agent that causes a foaming action to start after it is dispensed from a nozzle and exposed to air, thereby curing into a dry material. Similarly, cellulose or fiberglass with a curable adhesive may be used.

Any method known in the art of making the skin and/or the foam and combining the two can be employed. For instance, the polyurethane can be dispensed into a doll head mold so that it expands and fills in the entire space. The skin may have been previously prepared and placed in the mold before the polyurethane or it may be formed *in situ* during the molding process. In one embodiment of the invention, the polyurethane or other filling material is injection molded into the doll head. Using a mold, internal features can be molded into the foam for mounting movement devices, the eyes 22, hair, and the like.

A fabric 120 is positioned on the stuffing 110 in the area at which the stuffing is to be coupled to the doll body. It can be simply placed on the area or bonded to the stuffing by means of a suitable adhesive or the like. The fabric is a woven material, preferably an open mesh, having a weave sufficient to facilitate a thread being passed through the fabric while functioning to maintain the integrity of the stuffing against which it is placed. The type of fabric is not restricted. Preferably, it is made from polyester or cotton.

Because of the need to be soft and pliable, the foam stuffing in itself is not integrally strong enough to be sewn to the body of the doll and withstand motion of the face member 21 which can occur during the sewing operation or thereafter. At some point, either during production or later when a child is
5 playing with the doll, the foam separates so that the face is no longer firmly coupled to the body. Use of the fabric provides sufficient integrity to the stuffing so that it resists disintegration or separation during the sewing of the face member 21 to the body 160 and/or the moving of the face member 21.

In one embodiment, the fabric 120 covers the entire inner surface 140 of
10 the stuffing. Alternatively, the fabric can cover only the edge portion 170 of the stuffing. Any desired extent of coverage of the stuffing can be employed as long as the area which is to be united with the doll body is covered.

In one embodiment, the doll head is molded in a single molding machine. A first mold having the shape of the outside of the face member 21
15 is placed in a molding machine. The material for the skin 100 is then injected into the mold thereby forming the face. Next, the stuffing 110 is injected into the mold creating the backing for the face member 21. Finally, fabric 120 is bonded to the foam.

To bond the fabric 120 to the stuffing 110, the fabric can be glued to the
20 stuffing. In another embodiment, the stuffing is heated slightly so that its surface melts and the fabric becomes bonded to the stuffing as it solidifies. In yet another embodiment, the fabric is placed in the mold prior to the injection of the stuffing so that the fabric becomes an integral part of the stuffing during the molding process. Heat bonding is the preferred method.

Once the fabric is coupled to the stuffing, the doll head can be attached to the body 160. The material for the doll body is placed over the edge of the doll head and the two pieces of material are stitched together using stitch 150 which traverses the skin, the stuffing and the fabric. Further, there may be
5 interfacing used between the doll body 106 and doll head 21.

Although the present invention was discussed in terms of certain preferred embodiments, the description is not limited to such embodiments. Rather, the invention includes other embodiments including those apparent to a person of ordinary skill in the art. Thus, the scope of the invention, should
10 not be limited by the preceding description but should be ascertained by reference to the claims that follow.